

f: 6

Philos: Transact: N^o: 246



f: 7



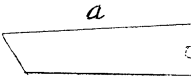
f: 8



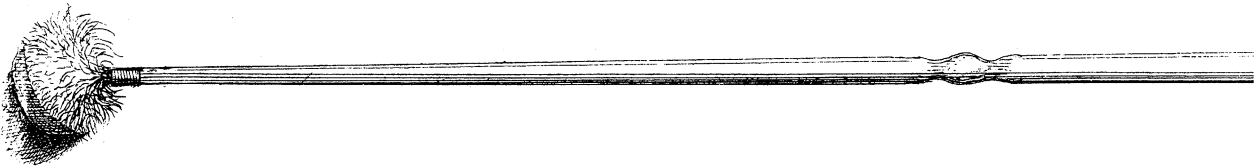
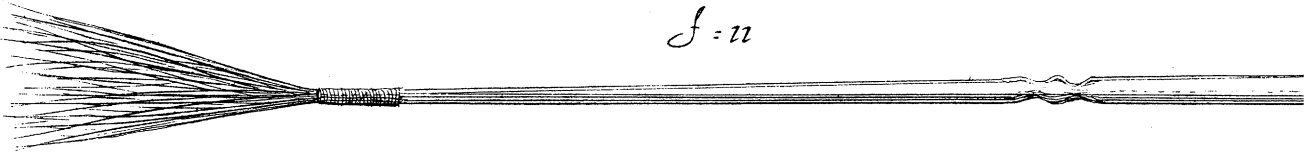
f: 9



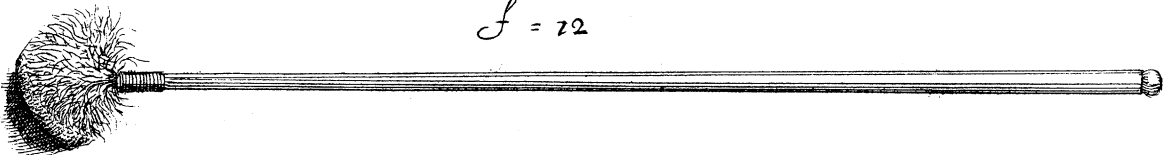
f: 10



f: 11



f: 12



f: 13



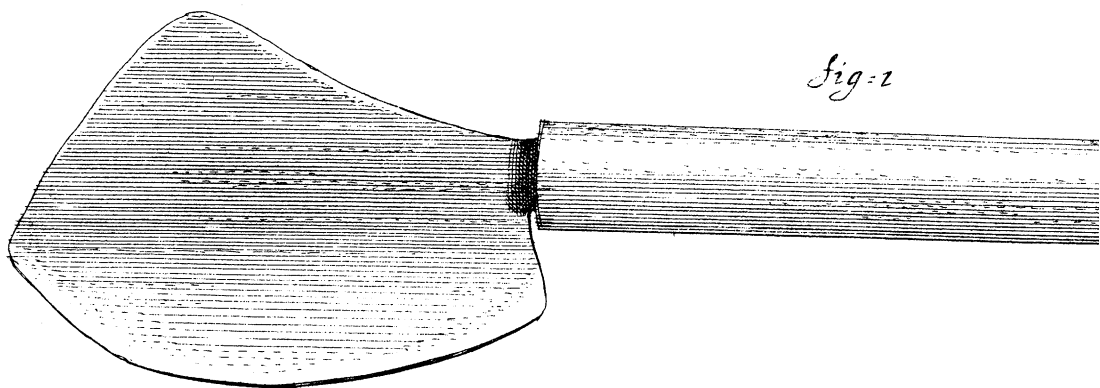
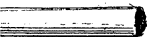
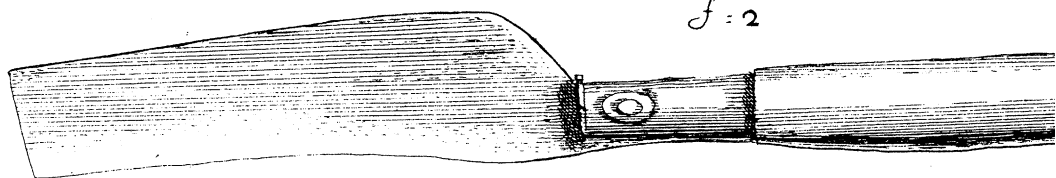
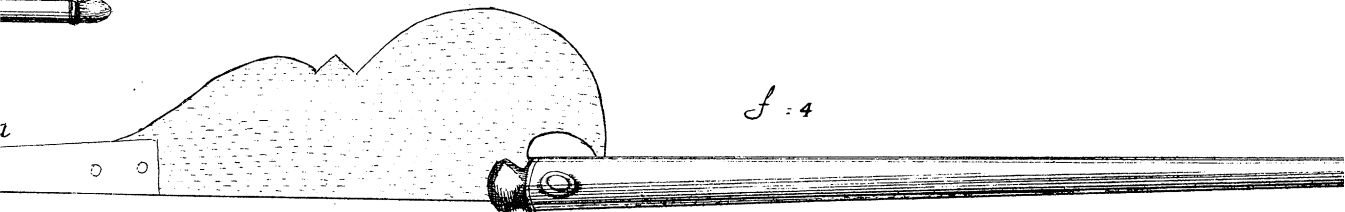


fig: 1

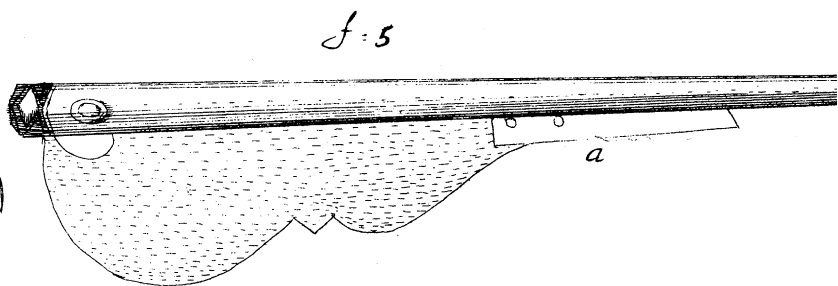


f: 2

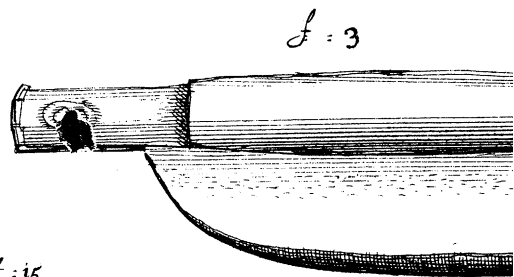


f: 4

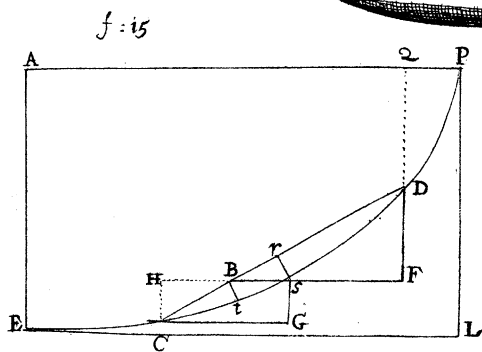
f: 24

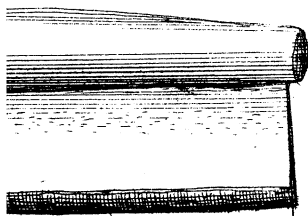
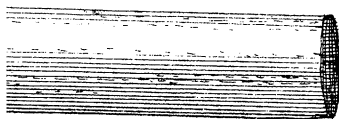


f: 5



f: 3





VII. *Curvæ Celerrimi Descensus investigatio
analytica excerpta ex literis R. Sault, Math.
D^o.-----*

CUM me novissimè Societate tua dignatus es, collo-
cuti sumus de *Curva Celerrimi Descensus*, Mundo Ma-
thematicò, Domino Bernoulliano, proposita. Interq; cætera
mentionem fecisti de demonstrationis meæ publicatione quam
e pluribus retro mensibus inveni: quamvis autem problema
illud nunc obsoletum videatur, libentius tamen publici juris
faciam, quia celeberrimus Leibnitius omnes Mathematicos,
hujus problematis solutionis compotes, enumerare suscepit,
necnon ne tesseram observantiæ meæ tibi ipsi debitam, omit-
tam.

Sit *AP* (Fig. 15.) linea Horizontalis; *P*, punctum a quo
corpus grave descendit, per Curvam lineam quæsitam *ADE*,
C & *D* puncta duo infinitè propinqua, per quæ corpus decisu-
rum fit, *CD* recta duo puncta connectens, *DC* & *sC*, *DF* &
SG, *FS* & *GC* vel *sH*, momenta curvæ, abscissæ, & ordi-
natim applicatæ respectivè. Capiatur *Dr* = *Ds* & *tC* = *BC*.

Quoniam in lineolis nascentibus, tempus est ut via per
curvâ directè & velocitas (i. e. in hoc casu, ut radix quadrata
altitudinis corporis descendi) inversè, per Hypoth. $\frac{Ds}{\sqrt{QD}} +$

$\frac{sC}{\sqrt{QF}} =$ Tempori *Minimo*. Et quia velocitas in punctis
æquialtis *S* & *B* per curvam *DsC* & rectam *DBC* eadem est,
tempus per *DC*, quod evidenter *minimum* est, erit ut
 $\frac{DB}{\sqrt{QD}} + \frac{BC}{\sqrt{QF}}$; æquentur ergo hæc tempora, & $\frac{Ds}{\sqrt{QD}} + \frac{sC}{\sqrt{QF}}$
 $= \frac{DB}{\sqrt{QD}} + \frac{BC}{\sqrt{QF}}$. hoc est $\frac{DB-Ds}{\sqrt{QD}} = \frac{sC-BC}{\sqrt{QF}}$ vel $\frac{Br}{\sqrt{QD}} = \frac{ts}{\sqrt{QF}}$.

Sed triangula Evanescencia *Brs*, *Bts* æquiangula sunt tri-
angulis *DsF*, *HsC*; Erg. $\frac{Bs}{Ds} = \frac{Br}{sF}$ & $\frac{ts}{Hs} = \frac{Br}{st}$ componan-

tur hæ duæ rationes æqualitatis & $\frac{Br}{Ds \times Hs} = \frac{ts}{sF \times st}$. Ex æquo $\frac{vQD}{sF \times st} = \frac{vQF}{Ds \times Hs}$. Quandoquidem autem quidvis ex Elementis æquabiliter fluere supponatur, ponamus $DS=SC$ & evadet simplicissima Curvæ expressio $\frac{vQD}{sF} = \frac{vQF}{Ds}$. ubiq; i. e. in puncto flexuræ Curva semper erit in ratione composita velocitatis directæ & momenti applicatim ordinatæ, inversæ. Sit \dot{x} , \dot{y} & \dot{z} fluxiones absciissæ, ordinatæ applicatæ, & curvæ respective, $\frac{\dot{x}^{\frac{1}{2}}}{\dot{y}}$ constans est, ut supra.

Ergo. $\frac{\dot{x}^{\frac{1}{2}}}{\dot{y}} = 1$ fed posuimus \dot{z} ($= \sqrt{\dot{x}\dot{x} + \dot{y}\dot{y}}$) constans. Ergo ut hæc unitas constans sit & dimensiones debitas retineat $\frac{\dot{x}^{\frac{1}{2}}}{\dot{y}} = \frac{a^{\frac{1}{2}}}{\sqrt{\dot{x}\dot{x} + \dot{y}\dot{y}}}$, & post reductionem, $\dot{y} = \frac{\dot{x}^{\frac{1}{2}} \dot{x}}{\sqrt{a-\dot{x}}}$ Expressio notissima Cycloidis PEL. 2. E. 7.

VIII. *A Catalogue of Books lately printed in Italy.*

COLLECTANEA Monumentorum veterum Ecclesiæ Græcæ ac Latinæ quæ hæctenus in Vaticana Bibliotheca delituerunt. Laurentius Alexander Zacagnius Rom. Vaticanæ Bibliothecæ Præfectus, e scriptis codicibus nunc Sig. primum edidit, Græca Latina fecit notis illustravit 4to. Romæ 1698.

Osservazioni Historiche sopra alcuni Medaglioni del Sig. Cardinale Carpegna dell' Abbate Filippo Buonarrotti. 4to. Roma 1698.

Ema.

